



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,294	02/12/2002	Henrik Jensen	BP 2107	4917
51472	7590	08/15/2006		
GARLICK HARRISON & MARKISON P.O. BOX 160727 AUSTIN, TX 78716-0727			EXAMINER KIM, KEVIN	
			ART UNIT 2611	PAPER NUMBER

DATE MAILED: 08/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/074,294

Applicant(s)

JENSEN ET AL.

Examiner

Kevin Y. Kim

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on amendment filed on 6-5-2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-27 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 10 is/are rejected.
- 7) ☒ Claim(s) 5-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1,4,10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu (5,991,346 previously cited) in view of Monahan et al (US 6,044,124).

Claims 1.

Lu discloses a method for determining an optimum sampling time for data recovery, comprising the steps of;

receiving an encoded signal, i.e., NRZ data signal, which has positive and negative values with respect to a reference (see Fig.3)

determining a reference crossing of the encoded signal, i.e., a zero crossing, see col.5, lines 1-7,

determining a sampling phase based on the zero crossing and the symbol rate, see col.5, lines 7-11, and

sampling the encoded signal at the determined sampling phase.

But Lu fails to teach updating the determined sampling phase based on an overflow or underflow of an accumulator. Monahan et al teach updating a sampling time by detecting an overflow or underflow of a buffer (i.e., "an accumulator") in order to compensate possible drift between the transmit symbol rate and the receive symbol rate. See columns 1 and 2. Thus, it would have been obvious to one skilled in the art at the time the invention was made to further

Art Unit: 2611

adjust the determined sampling phase of Lu based on an overflow or underflow condition of a buffer (i.e., “an accumulator”) in order to compensate possible drift between the transmit symbol rate and the receive symbol rate, as taught by Monahan et al.

Claim 4.

It is well established that the NRZ encoded signal, such as used by Lu, contains a clock signal and thus the symbol rate is determined based on the encoded data.

Claim 10.

Lu teaches that the symbol time includes a plurality of oversampling times. See col. 5, lines 27-39.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lu in view of Monahan et al, as applied to claim 1 above, and further in view of Serfaty et al (US 4,651,026 previously cited).

Lu in view of Torsti discloses all the subject matter claimed except for the encoded signal being a multi-leveled one having “third data values” and “fourth data values.” Serfaty et al disclose a need for achieving optimum sampling time in a multi-level signal. See col.3, line 62 – col.4, line 2. Thus, it would have been obvious to one skilled in the art at the time the invention was made to recover a multi-level signal such as disclosed by Serfaty by using the sampling time determination method of Lu for the purpose of providing an optimum sampling point to the received multi-leveled signal.

Art Unit: 2611

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lu in view of Torsti, as applied to claim 1 above, and further in view of Roberts et al (US 4,575,683 previously cited).

Lu in view of Torsti discloses all the subject matter claimed except for determining and removing a DC offset in the received encoded signal. Roberts et al teach a method of determining and removing a DC offset in the received encoded signal. See Fig.1, 2A, 2B, 3A and 3B. Thus, it would have been obvious to one skilled in the art at the time the invention was made to determine and remove a DC offset in the received signal of Lu prior to sampling for the purpose of providing dc offset compensated signal for more accurate decoding the received signal as taught by Roberts et al.

***Allowable Subject Matter***

5. Claims 5-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 11-27 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

August 11, 2006



**KEVIN KIM  
PATENT EXAMINER**